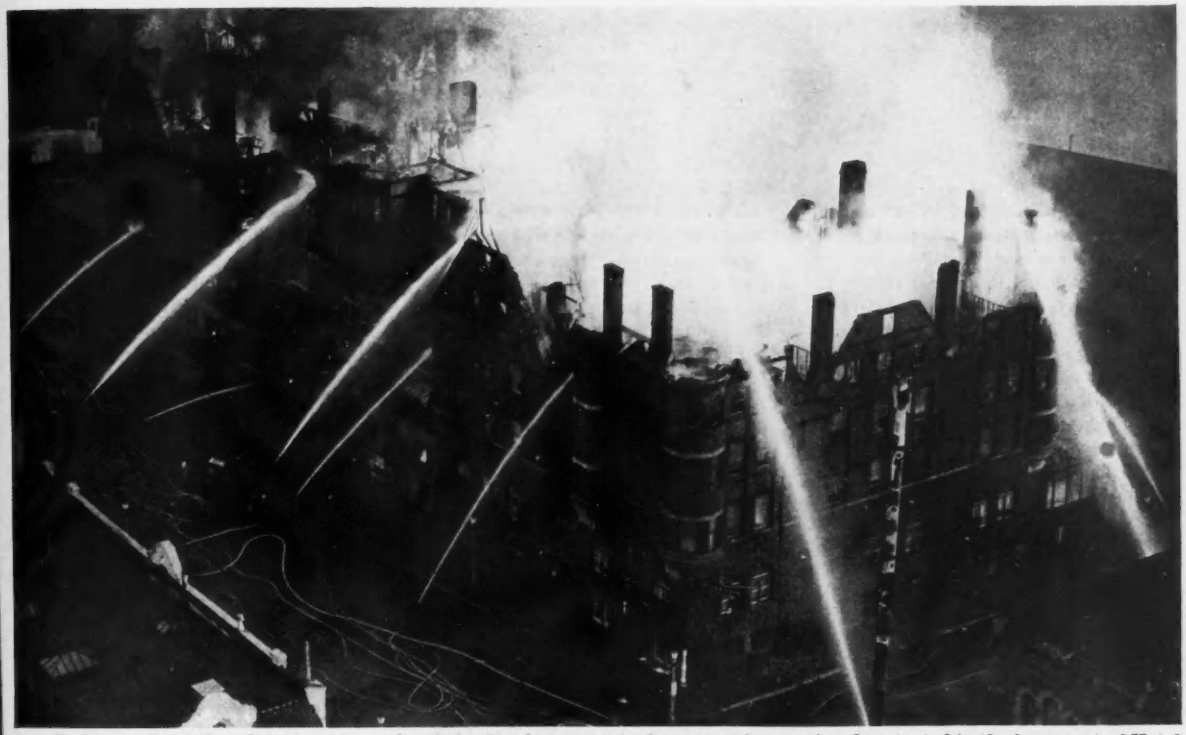
Volunteer Firemen

Professional Journal of the Volunteer Firemen's Section of the National Fire Protection Association

COPYRIGHT, 1937, NATIONAL FIRE PROTECTION ASSOCIATION

Volume 4, Number 7 | BOSTON, MASSACHUSETTS | July, 1937



Failure to heed the odor of smoke and call the fire department when an early morning fire started in the basement of Hotel Tacoma, at Tacoma, Washington, resulted in the destruction of the building. That all of the 126 guests and employees escaped death was due to spectacular rescues made by the fire department with scaling ladders and life lines.

A Nose For Smoke

You Can Tell a Good Fireman by His Nose — He Sticks Grimly to Adage That "Where There's Smoke There's Fire"

By Warren Y. Kimball

ONE way by which you can tell a good fireman is by his nose. In other words he has a nose for smoke. He can usually tell "live" smoke from the "dead" smoke or steam which follows fire extinguishing operations.

Regardless of other evidence he grimly sticks to the old adage of, "where there is smoke there must be some fire". How often the newspapers tell the story, "The occupants smelled smoke for several hours before the building was found to be ablaze."

Firemen do not trust smoke. It is partly because the fireman considers smoke the outpost of his enemy fire, that he has earned the reputation among the general public of being a reckless fellow whose chief sport is to investigate the interior anatomy of a house with an axe. The fireman does not bother to reply that it is his duty when smoke is reported to thoroughly ferret out the source, for with professional indifference to public opinion he considers the opening of a partition to locate a fire in about the same light as a surgeon who must make an incision through the flesh to reach an offending appendix. If occasionally the operation proves to have been unnecessary it must be remembered that the important point is always the result obtained. Was the patient (or the house) saved?

A striking illustration of how persistent firemen prevent disaster by obstinately tracking down smoke occurred

one cold winter evening when a young man with a foreign accent walked into the fire station and reported, "We've been smelling smoke in our place for some time. How much will it cost to send a man down to investigate?"

Ascertaining the address, the officer in charge said, "It will cost you nothing, that's what we are here for."

In almost the same breath he ordered, "Turn out the company."

"Don't take the fire engines, the landlord will be mad," said the young man.

"It's our job now," said the officer as the apparatus rolled out of the station.

IN A short time the kit pulled up in front of an old four-story tenement packed with women and children, many of whom were already asleep. A glance showed that a beer parlor on the first floor was filled with persons mostly indifferent to the arrival of fire apparatus.

Sure enough, when a booster line was taken to the second floor, a faint haze of smoke could be seen.

Investigation showed the smoke to be the thickest in a bathroom but even there it was not heavy and its source could not be located. The walls were cool on all floors. The building had no basement and no furnace but was heated by individual stoves. Adjoining buildings were searched but showed no trace of smoke or fire. For an hour the search for a hot spot which might be opened continued without success but could not be given up because the smoke continued to increase in the bathroom on the second floor.

Finally there was but one thing to do and the chief ordered, "Go downstairs and open up directly below."

The occupants of the beer parlor were surprised when the firemen entered with their axes and booster hose. There was no sign of smoke or fire there and the walls were cool. Getting as near under the bathroom as possible a fireman swung his axe into the wall.

Behind the opening he made was a lively little blaze which was soon killed by the booster line.

The cause of the fire was no longer hard to find. At the top of the mopboard below the hole cut in the wall was a tiny hole in the wall made by a cigarette dropped by some person sitting at an adjoining table. The drafts of cold air in the open partitions of the old building had fanned the smouldering ashes from the cigarette into flames, but also had dissipated the heat so that the usual tell-tale hot spots or dark places in the walls, upon which the firemen depend to locate a fire, were lacking, although smoke was seeping into the floor above.

But for the firemen's persistence on a cold winter night the flames would have spread through the partitions and the occupants of that tenement would have had difficulty in escaping the terrors of a night fire.

International

Little time was required for fire to destroy the 5 story Hotel Loch Arbour at Allenhurst, New Jersey, early on the morning of May 17, 1937. Flaming embers started numerous small roof fires which were quickly extinguished by firemen from 21 companies. Inadequate water supply from hydrants forced firemen to pump water from a nearby lake.

Volunteers Stop Roof Conflagration

ONLY the quick concentration of 21 fire companies, most of which were volunteer, prevented a sweeping conflagration at Allenhurst, N. J., early on the morning of May 17, when the large 5 story Hotel Loch Arbour was completely destroyed by fire. The following account of this fire has been prepared from a report furnished by R. M. Cadman, Superintendent, Engineering Department, Schedule Rating Office of New Jersey. During the blaze flying embers blown by a strong southeast wind ignited the roofs of many houses northeast of the hotel. Fortunately firemen with hand extinguishers were able to control these roof fires as fast as they started. At one time ten roof fires were burning simultaneously.

Had the fire occurred two weeks earlier firemen would have been almost helpless to prevent its spread. Most of the hydrants in the vicinity are supplied by 4-inch mains and the total hydrant supply available is only about 850 gallons per minute. It was necessary for pumpers to take suction from a lake across the street from the hotel. Until two weeks before the fire this lake had been drained to permit the construction of a sewage disposal plant and had the hotel fire occurred at that time a conflagration would undoubtedly have developed.

The large brick and frame resort hotel building had just been completely redecorated. The fire, likely due to defective wiring, started in the lobby, and was discovered when the entire front of the structure appeared to burst into flames at once. The Allenhurst Fire Department was notified by telephone at 1:14 A.M. and upon arrival called the Asbury Park and Deal departments. Wanamassa and Oakhurst were then notified and when it seemed as if the fire would get beyond control a general alarm was broadcast from the county police radio station. This brought apparatus from as far north as Highlands and as far south as Manasquan, an area over twenty miles long.

Firemen were at first hampered by the lack of water from hydrants and pumpers were moved to the edge of the lake. At the height of the fire 13 pumpers were in operation.

In addition to the hotel 4 frame garages were destroyed and a 3-story frame annex to the hotel was badly damaged. The total loss was $150,000.

Burning of cattle pens and sheds valued at $200,000 in stockyards at South St. Paul, Minnesota on April 29, 1937.

The Record of the "Automatic" Fireman

EVERY city or town has buildings about which the firemen say, "If that place ever gets on fire it will be gone before we get there". Every fireman knows of buildings, which because of combustible contents, flue-like open partitions and wall spaces, or open stairways and shafts, are liable to sudden and certain destruction by fire. The only chance to save such buildings would be to be at the scene when the fire starts.

It is not possible to have a fireman with hose stationed in every "fire-trap" waiting for a fire but it is possible for firemen to have able and efficient representatives on the job always ready to put water on a fire before it has a chance to spread. For many years automatic sprinklers have been this sort of an ally to firemen. It is estimated that they protect, in the United States, property valued at more than 40 billion dollars. Losses in buildings enjoying this form of fire protection probably average only a tenth of losses in similar non-sprinklered properties.

For forty-one years the N.F.P.A. has been the custodian of the record which shows the performance of automatic sprinkler systems in fires. Each year an average of more than 2500 reports on fires in buildings protected with sprinklers are received by the N.F.P.A. executive office. These are carefully studied and tabulated and are the basis of the "Annual Sprinkler Tables" published in the April *Quarterly* which goes to all N.F.P.A. members. Again this year these tables showed that automatic sprinklers successfully controlled more than 96 per cent of the fires against which they went into operation.

A total of 73,700 fires in sprinklered properties have been reported since the record was started in 1897. In that period 13,918 of these fires were too trivial to operate the sprinklers. This makes a total of 59,782 fires in the record in which automatic sprinklers have operated.

Automatic sprinklers almost never fail to operate because of mechanical troubles. Sometimes however human negligence may cause sprinklers to fail. The N.F.P.A. record shows that one-third of all failures occur when water supplies to sprinklers are for some reason shut off. This supports the rule insisted on by many departments that sprinkler water supply valves be kept open and never closed before a fire is completely extinguished. Another cause of failure is lack of an adequate water supply for sprinklers. This may occur if fire department pumpers take all of the water from mains supplying sprinkler systems. Many fire departments require that one of the first pumpers to arrive at a fire in a sprinklered building hook up to pump into the sprinkler system from a hydrant.

Firemen on inspections finding merchandise piled close to sprinkler heads usually insist that this condition be corrected. High piling of stock prevents proper distribution of water from sprinklers and allows a fire to spread.

Chances are often against the firemen in attempting to control fires in old "fire trap" buildings and hazardous occupancies. Approved sprinkler installations, however, reverse the odds to at least 24 to 1 in their favor. The following table shows the performance of sprinklers since 1897.

PERFORMANCE OF AUTOMATIC SPRINKLERS. 1897-1937, incl.

	No. of Fires	%
Extinguished fire	41,882	70.1
Held fire in check	15,558	26.0
Total Satisfactory	57,440	96.1
Unsatisfactory	2,342	3.9
Total	59,782	100.0

△ △ △ △ △

South St. Paul Stockyards Conflagration

THE South St. Paul, Minnesota, fire department under Chief Harry Rund fought a hard battle on the evening of April 29, 1937, when fire destroyed a large portion of the St. Paul Union Stockyards in South St. Paul. More than 6 entire blocks of closely built wooden cattle sheds and pens were destroyed with a $200,000 loss.

The alarm was sounded at 7:10 P.M. by a watchman. The South St. Paul fire department of 8 paid and 16 volunteer firemen responded with 2 pumpers and a hose truck. They placed 6 streams in operation and called the St. Paul fire department who responded with 5 pumpers and a ladder truck. The volunteer fire brigade of stockyard employees also put 12 hydrant streams in service and checked the spread of the fire toward the west.

For the first hour until emergency pumps supplying the mains could be started, the pressure was low. This condition was aggravated by the loss of water through hydrants from which the fire drove the firemen. Only a brick fire wall checked the fire's northerly spread.

Trailer Houses

Nomad Homes Contain Everything Expected in a Full Sized House in Concentrated Form—Fire Hazards Are No Exception

MANY modern inhabitants of North America do not have to run away from home to see the world. Their lot is one of perpetual sunshine, with winters in Florida or California and summers in Canada. Like the tortoise, wherever they wish to go their house is always at their back. If their fancy leads them to a "little gray home in the west," their desire is fulfilled by simply turning down a dust covered road toward the setting sun. Such an existence is no longer confined to the song writer's fancy, but is the day by day experience of thousands who live in automobile house trailers. No longer does the breadwinner leave the family cottage with its guiding candle in the window to face the world alone. The cottage is now atop two wheels at the back of his own car. Transient or seasonal workers may bring their families with them as they seek employment.

Trailer houses present some new problems to firemen. It used to be that when a call was received for a fire on Main Street you were pretty sure that at least the ruins would be there when you arrived. With mobile buildings a fire department must keep up its reputation for efficiency if it wants to get any business. A trailer owner can even be fussy about who he lets fight a fire in his house. If he is well informed, on finding his house afire he might say: "I think I'll take my fire over to the next town. The boys in the fire department there have been to the state fire school".

On the other hand fighting fires in trailers would have several advantages from a fire department point of view. If these portable apartments become universal, fire departments need worry no longer about shortage of hose or friction loss in long lines. All it will be necessary to do will be to hook the burning house to the back of the pumper and tow it to the nearest hydrant. Even the problem of exposure fires may be lessened where endangered houses are on wheels so that they may be moved to safety when a fire starts.

Washington Post

"You'll hafta wait a minute, boys—my wife's taking a shower!"

BUT with all the kidding about trailers they cannot be dismissed as an unimportant problem. With an estimated 200,000 trailers on the road this year fire protection engineers are giving serious thought to them. The fire protection problem has two major aspects. One concerns the actual trailers and the other the trailer camps which are being established in many communities.

The trailers themselves have many of the fire hazards found in ordinary dwellings such as those from cooking, heating, and lighting. These hazards are perhaps intensified by being packed into a smaller bundle. Gasoline stoves commonly used for cooking in trailers furnish a most serious fire and explosion hazard. There is always the serious danger from gasoline fumes while filling a gasoline stove inside the cramped quarters. Firemen familiar with gasoline stove explosions can well imagine what the results might be should such an explosion occur while the family was inside. In many trailers the stove is located amidships between the dining table and the only door. Windows are frequently screened and are usually too small for ready use as exits. A practical cooking stove and one which is reasonably safe for trailers is a gas stove. This may be served by one of the compressed gases which may be obtained in cylinders of a convenient size.

In addition to cook stoves some trailers are equipped with coal heating stoves. These may provide a serious hazard because, due to space limitations, clearances between stoves and combustible materials are often entirely inadequate. In some cases clearances are less than two inches. One thing that is almost certain is that should a serious collision or upset occur while stoves of any type are in operation a fire would be almost inevitable.

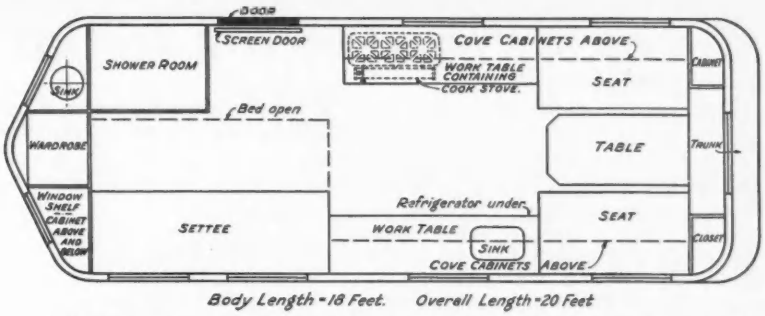
Trailers are generally wired for electricity, usually having both a 6-8 volt circuit supplied by the automobile battery and generator and a 110-volt circuit for use when the vehicle is located at a trailer camp or other point where it is possible to obtain an electrical connection. In ordinary dwellings electric wiring is generally considered to be a controlled fire hazard because of laws and regulations requiring safe installation. However local electrical ordinances may not apply to trailers and there is danger that electric wiring may be substandard making fires due to a short circuit likely. A substandard connection of insufficient capacity from an outside supply might be overloaded and break down if a number of appliances were in use.

The compact quarters of a trailer also adds to the danger from one of the leading causes of fire fatalities—suffocation. It would not take long for heat and smoke from a fire to fill the small living quarters. The thoughts of attractiveness and comfort, ever in the minds of trailer designers, has brought upholstered seats and convertible bunks which would furnish ready fuel for a carelessly discarded cigarette or match. A burning mattress might easily cause suffocating smoke and trap sleeping trailer occupants.

Although trailer occupants may constantly travel about much in the fashion of "A man without a country" having "no abiding city" their travelling homes will not always be without provisions for fire safety. Automobile house trailers and trailer camps were the subjects of extensive discussion at the N.F.P.A. annual meeting in Chicago in May. The N.F.P.A. Committee on City Planning and Zoning reported that already a number of cities restrict the parking of trailers to regulated trailer camps or limit the time during which a trailer may remain within the city limits. The interest in the trailer problem and its relative importance caused the convention to authorize an N.F.P.A. committee to study the fire prevention problems introduced by trailers.

The discussion at Chicago also brought out the fact that Underwriters' Laboratories, Inc., the great national fire testing laboratories, are interested in trailer fire and safety problems and are studying provisions for safe electrical appliances; proper installation and fusing of electrical wiring; safe heating, cooking, and refrigeration; safe chassis and body design. The Laboratories are also concerned with the safety of the assembled trailer as a whole.

Underwriters' Laboratories, Inc. are interested in seeing that electric wiring and other equipment which they label is installed so as to be safe under actual conditions of use. They expect to put a label on an assembled trailer to certify its safety, much as they now label street cars. Firemen who now look for Underwriters' Laboratories labels as a guarantee of quality on fire extinguishers, fire hose, and electrical equipment, will in the future find the same guarantee on the automobile house trailer which meets reasonable fire protection and safety requirements.



A typical medium sized automobile house trailer showing how a fire at the gasoline stove might cut off access to the doorway.

THE large number of trailers concentrating at certain locations has resulted in the formation of trailer camps to simplify control problems such as proper policing, sanitation and refuse removal. While congestion adds to the danger of a fire spreading from one trailer to another, with reasonable water supplies available, the possibility of a fire spreading should not be great. Although interiors of trailers are often of flimsy plywood construction, most trailers built today have sheet metal sides which would assist in confining a fire for at least the lower half of the vehicle. It is certain that with reasonable regulation as to the minimum space allowed each trailer, the congestion and consequent exposure hazard in trailer camps is probably no greater than that of the average automobile parking lot. It is also likely that in event of a fire, it would be possible to move other trailers from the immediate vicinity. However, every trailer camp should have water and chemical equipment available for fire fighting and a conveniently located fire alarm box connected to the municipal system is certainly desirable. The city of Pasadena, Calif., requires that enough 1½-inch hose be available at each trailer camp to cover the entire camp. It would certainly also be advisable for every trailer to have a fire extinguisher in an accessible location, preferably near the door of the trailer.

While properly supervised trailer camps may not be considered unusually hazardous it is certain that firemen may expect trouble in localities where several trailers are allowed to park in crowded back yards without any regard as to requirements for proper spacing between trailers. Should a fire occur under such conditions it is obvious that it might quickly involve the entire group of trailers and spread to nearby buildings. Also should a fire start inside a building obstructed by parked trailers it might be difficult for firemen to reach the building to remove occupants and attack the fire.

Ned Roberts, Sarasota Chamber of Commerce.

Aerial view of the Sarasota, Florida, tourist park as 1,500 automobile house trailer units gathered last February for the annual convention of the Tin Can Tourists of the World. During the convention there were 5,000 persons at the camp. The picture shows the orderly manner in which the trailers are parked with wide lanes making every part of the camp accessible.

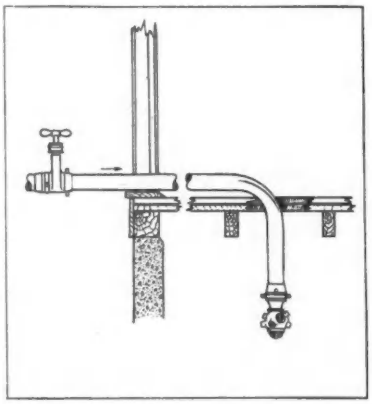
Nozzles for Cellar Fires

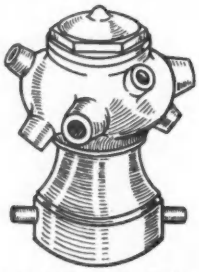
Some Fires Can Not Be Reached with Ordinary Fire Streams—For These There Are Special Distributors, Cellar Pipes and Extension Nozzles

EARLY one oppressively hot July evening smoke was discovered coming from the basement of an old stone building. The building housed a commission merchant dealing in dairy products. When the first apparatus arrived and entrance was made into the building it was found that the entire building was bulging with heat and smoke. Dry irritating clouds billowed out as the laddermen made a complete ventilation job from the roof downward opening windows. It was also necessary to raise the awnings which prevented the escape of the smoke.

Lines were quickly run to the front and rear of the first floor to prevent the flames, which had great headway in the basement, from spreading upward through shafts or partitions. An attempt was made to attack the seat of the fire by streams operating from bulkheads leading from the sidewalk to the basement at both front and rear but little progress could be made due to the dense mustard colored billows of smoke. With four lines well placed however, the fire was effectively surrounded although burning with a menacing intensity.

As soon as it was apparent that it would be impossible for the regular hose streams to reach the basement, axemen wearing gas masks were ordered to open a hole about a foot square directly over the fire. While this was being done a new line of hose was run. To the end of this line was attached a distributor nozzle. Fifty feet back of the nozzle was a hose gate making it possible to control the line from a convenient location.





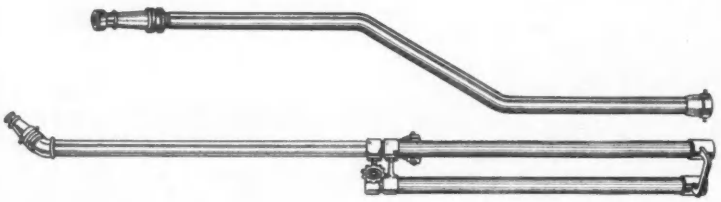
A typical distributor nozzle for use in fighting cellar fires. A gate valve is always provided at the end of the first section of hose back of the nozzle to make it possible to shut off the line. The effect of a distributor nozzle is much like that of a giant sprinkler.

The distributor nozzle was lowered through the hole into the basement and was operated about five feet down from the basement ceiling. Its effect was much like that of a giant sprinkler head. With 30 pounds pressure at the nozzle, the discharge from the distributor was approximately 500 gallons of water a minute or twice the usual discharge of a standard hose stream. This amount of water in the vital spot was quickly effective and the fire was soon sufficiently subdued to permit the other lines to advance and completely extinguish the fire.

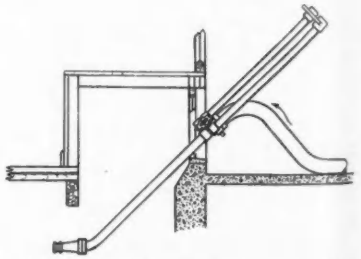
Distributor nozzles and cellar pipes of other types are essential equipment in all fire departments. Distributor nozzles are generally carried on every pumper while the larger cellar pipes are more often found on ladder trucks.

Where it is not possible to cut a hole directly over a fire and where a greater range of stream is needed than that provided by distributor nozzles, the larger cellar pipes are advantageous. Unlike the distributor nozzle, the cellar pipe does not act like a sprinkler head but discharges a single heavy stream in any desired direction. To obtain the greatest range the stream should be directed upward at a moderate angle. It should not be directed so sharply upward that it will only hit the ceiling joists near the hole through which it is operated. It is obvious that to be effective the stream must be directed at the fire and the cellar pipe must therefore be more carefully operated than the distributor which throws water in all directions.

A third type of cellar nozzle having a somewhat different field of usefulness might be described as extension pipes. These nozzles consist of a long pipe and are valuable in attacking fires from outside of cellar windows. They may also be used to place a stream in an attic or other location made inacces-



The bent cellar pipe above and the extension cellar pipe below are popular forms of nozzles used to extend solid streams into basements, attics, and other locations inaccessible to regular hose streams. The long adjustable handles shown on the lower pipe assist in controlling the direction of the stream.



An extension pipe in operation through a cellar window. The stream from the nozzle may be elevated by lowering the handles.

sible by the fire. Some of these nozzles are equipped with long handles which make the line easier to control. Some fire departments make their own extension pipes by using a five foot length of pipe threaded to fit standard hose couplings. Such equipment used with a distributor nozzle on the end also has proved effective in some cases. Another common type of extension pipe is the bent cellar pipe. By having bends in the pipe it is possible to direct a straight stream at an upward angle when it is operated through a cellar window or floor opening.

The limitations of bent cellar pipes are that they require considerable space for operation and the lateral direction of the stream cannot be readily changed without moving the entire appliance.

△ △ △ △ △

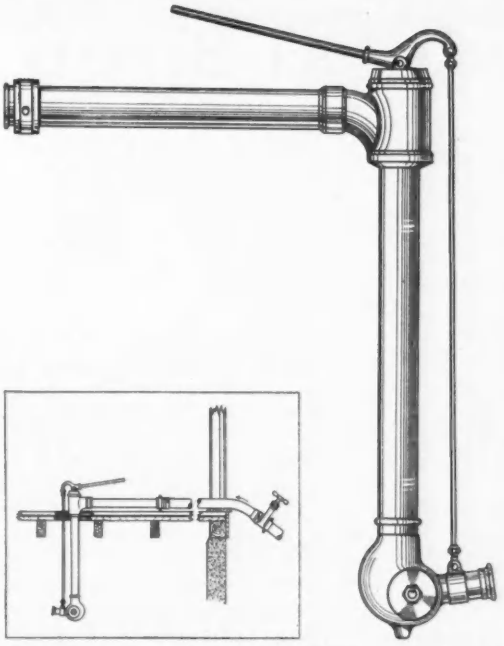
Maintenance of Hose Couplings

COUPLINGS should be kept in first class order, and each time after the hose is tested, the threads should be examined and any injured or defective couplings should be removed or turned over to a machinist with proper facilities for making repairs. They should be so adjusted that they can be easily screwed up by hand. Couplings should not be greased or oiled if found to be stuck. Ordinarily, they can be satisfactorily freed by immersion in warm water.

After each time hose is used the couplings should be gone over. If dirty, they should be spun in a pail of soapy water, but in no case should oil or grease be applied.

When checking condition of couplings, nozzle equipment should also be looked at. Nozzles or play pipes that are bent or battered in any way should be carefully repaired if possible or else replaced. Bent or battered nozzles should not be used, as the effective reach and fire extinguishing capacity of the stream will be much impaired. The slightest roughness of the tip will sometimes cause the stream to break or spray and become inefficient.

The rubber coupling washers should be also gone over at this time, and renewed as needed, as they deteriorate and break away. Care should be taken also that the rubber washers do not project into the waterway, particularly at the nozzle coupling, as this will frequently cause a ragged stream, thus reducing its effectiveness.



A cellar pipe is designed to deliver a large solid stream which will reach further than that from a distributor nozzle. Care must be taken to direct the stream in the proper direction and at the correct elevation.

"Streamlining" Doesn't Help Fire Fighting

ARE the modern streamlined automobiles designed so as to prevent the successful use of fire extinguishers? This is a question raised by an expert on fire extinguishers, Mr. A. J. Muir, engineer for Underwriters' Laboratories of Canada, who cites the following instance of an automobile fire which could not be controlled with the usual Class B fire extinguishers (those for flammable liquid fires). Mr. Muir wonders if any other readers of VOLUNTEER FIREMEN have had similar experiences. He points out that had the fire which he reports occurred in a combustible building or other less favorable location the results might have been serious.

The fire occurred in a 3-story reinforced concrete building occupied by an automobile distributor both for a sales room and general servicing. A customer had brought his new streamlined car in for some adjustment. Its gasoline tank had just been filled. It was driven up 2 concrete ramps to the third floor shop. The room temperature was somewhat higher than the gasoline in the automobile tank. This caused the gasoline to expand with the heat and overflow. In some undetermined manner it ignited. The heat from the fire caused the gasoline in the tank to overflow some more, thus adding to the blaze.

An adequate supply of foam and 1-quart vaporizing liquid (carbon tetrachloride) extinguishers were located throughout the building. These types of extinguishers are among those recommended by the N.F.P.A. regulations on First Aid Fire Appliances for use in fighting automobile fires because of their smothering effect upon flammable liquids. These extinguishers were quickly brought into use but it was impossible to reach the seat of the fire with the streams. Other automobiles nearby were moved to a safe location. By the time the fire department arrived the rubber connecting the gasoline tank to the fill cap had burned away and nothing could be done to prevent a total loss to the machine.

The reason why this fire could not be controlled was obviously the faulty design of the modern streamlined automobiles. In these the gasoline tank is inaccessible to a fire extinguisher. The new automobiles have a clearance from the floor to the running board of only 9 inches. The rear wheels are enclosed with fenders and the body extends beyond the back with a rear compartment or trunk surrounding the gasoline tank.

"Streamlining" of automobiles is a great talking point for salesmen. Many automotive engineers do not like it and a few have had the courage to point out that crowding of passengers and poor visibility for the driver are among evils attendant upon that kind of body design. This fire chalks up another black mark against streamlined design.

Of course it may be argued that it was poor judgment to fill the gasoline tank too full in the first place, and that it was thoughtless to then bring the tank into a warm location which aggravated the situation, but the loss of the automobile is principally chargeable against the body design which made the gasoline tank inaccessible.

The Federal Siren

THE FEDERAL FIRE SIREN is the best paying investment any town with a volunteer fire department can make. Its signal call is like no other sound. Its variable tone, from a piercing shriek to a deep guttural roar, commands action and speed in response.

Millions upon millions of fire loss could be saved if no time was lost between discovery of fire and sounding of alarm. Hundreds of towns in every state now use the Federal Fire Siren.

THE FEDERAL VERTICAL SIREN

● Federal engineers have designed a siren to distribute sound in a wide range in all directions—Rugged in construction to withstand all kinds of abuse—Entirely weatherproof housing—Finished in Red Duco or Aluminum—Withstands sleet, rain, hail and dust storms—Equipped with special high speed, ball bearing motor—Approved by the National Board of Fire Underwriters—for full particulars

WRITE FOR NEW BULLETIN NO. 55

FEDERAL ELECTRIC COMPANY, 8717 So. State St., Chicago

1 GALLON—DUPLEX PUMP

"CAPTAIN"-FYR-FYTER

AN IDEAL EXTINGUISHER FOR VOLUNTEER FIRE DEPARTMENTS

Here is the equivalent of four 1-quart extinguishers built into one thus making this large quantity of vaporizing liquid available without running for another extinguisher when more than the average size blaze is encountered. This is but one of the complete line of Fyr-Fyter Extinguishers each of which have exclusive merits which stamp them as superior.

DEALERS WANTED

If you are interested in adding to your income by spare time work or in building a permanent business for yourself without investment in stock, fixtures, etc., write for our new Dealer's Plan to

FYR-FYTER COMPANY
Dept. 20-19 DAYTON, OHIO

Membership Plan

Volunteer Firemen's Section, National Fire Protection Association

WHERE 20 or more firemen in a volunteer company or department affiliate with the Volunteer Firemen's Section the cost is 50 cents a year *per man*. Each fireman will receive one copy of VOLUNTEER FIREMEN, the monthly journal of the Volunteer Firemen's Section, mailed regularly to his home address. The company or department automatically becomes a member of the National Fire Protection Association and is entitled to full privileges of membership. All the literature regularly issued to N.F.P.A. members is mailed to headquarters of the company or department.

Membership may be applied for by one member of the company or department collecting 50 cents for each of the 20 or more members and making a single remittance for the group, or the company or department may take a membership for its men and make a single remittance from the company or department treasury.

Companies With Less Than 20 Members

Because of the large amount of material mailed to members, not less than $10.00 can be accepted from any company or department for membership dues. In the case of companies or departments with less than 20 men this means that the cost divided among them will be slightly higher per man. Of course, some such companies or departments may prefer to make a single remittance of $10.00 from the company or department treasury. In other cases a few interested citizens, not members of the company or department, may be glad to contribute 50 cents apiece to make up the required minimum of 20, so that the members may secure the rate of 50 cents per man.

These companies or departments have full privileges of N.F.P.A. membership as above, and each member receives the monthly magazine, VOLUNTEER FIREMEN, at his home.

Discussion Subjects

63

Q. What are some of the special types of nozzles useful in fighting cellar fires?

A. Distributors, cellar nozzles and extension pipes. See page 6.

64

Q. What are some of the fire problems resulting from automobile trailers and trailer camps?

A. Trailer fire hazards are discussed on page 4.

Problem Questions FOR JULY

Suggested for discussion at company and department meetings this month

65

What problems do air conditioning systems present to firemen?

66

How should doorways in division walls be protected to prevent the spread of fire?

Watch for the answers in the next issue of VOLUNTEER FIREMEN

BUT *how soon* WAS THE ALARM TURNED IN?

WHEN fire breaks out, the fire department must be summoned instantly. But *who* will discover the blaze . . . who will turn in the alarm . . . and *when?*

With Aero Automatic Fire Alarm System protecting the premises, fire will not get a head-start. Aero detects fire when it is a small blaze, and automatically transmits the alarm direct to the fire department. There is no waste of precious minutes through belated discovery or delayed alarms, which are the most frequent causes of large-loss fires.

Aero is a pneumatic system which operates on the "Rate-of-temperature rise," assuring the fastest possible detection. It is easy to install, inconspicuous in appearance, adaptable to any size or type of building. No capital outlay is required for installation.

Aero's efficiency is proved by its performance record in protecting all types of property throughout the country. The Aero system is installed only by A.D.T., a nation-wide organization specializing in fire and burglary protection services. Write for complete information.

AERO AUTOMATIC FIRE ALARM

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.,** 155 Sixth Avenue, New York, N. Y.

A·D·T

A NATION-WIDE PROTECTION SERVICE AGAINST FIRE, BURGLARY AND HOLDUP

Volunteer Firemen

Professional Journal of the Volunteer Firemen's Section of the National Fire Protection Association

Published by the National Fire Protection Association, a voluntary non-profit organization, 60 Batterymarch Street, Boston, Massachusetts, U.S.A. Franklin H. Wentworth, Managing Director. Percy Bugbee, Assistant Managing Director. Horatio Bond, Managing Editor.

Volume 4 **July, 1937** Number 7

Professional Standards Technical education and training give men a tremendous head start over their less fortunate brothers who must depend wholly on the hard school of practical experience in learning a job. If a thorough formal education was not available for the medical profession, we would be obliged to take our ills to a group of persons who might at best have the skill of the average "practical" nurse. They might get us through a lot of ordinary complaints, but we wouldn't be able to look forward with much calm and confidence to an operation for appendicitis, let us say, if we had to go under the knife of a person who had picked up what he knows about the operation in some hit-or-miss fashion.

There are many leaders in fire departments who look forward to the time when the fire service can be put on the high professional basis on which other important fields of public service now operate. Unfortunately, however, all firemen are not of the same mind in the matter. The New York Civil Service Commission recently gave some 5 per cent preferential credit to applicants for the New York Fire Department who had engineering training. The commission's ruling did not find unanimous approval among the firemen of the city.

Much fire department work is essentially a special application of engineering principles which gives the engineering-trained fellow an advantage in facing examinations far more than that represented by the preference percentage. So by itself, the commission's action is probably unimportant. But if all fire department members felt as those who criticized it, it may be a long time before the fire service can get into the top brackets among professional men. And since top flight men get top flight pay, there are some practical advantages of a high professional standing.

The present requirements for admission to the New York Fire Department set the highest standard of any city in the country. The Number 1 man on a recent list of those qualifying was a college graduate. And the department is not sacrificing brawn for brains, because the physical requirements for admission have also been made harder to pass.

The latest step toward a professional fire service is the authorization of a two-year undergraduate course in firemanship training at the Oklahoma Agricultural and Mechanical College. In this development an essentially volunteer fire department is to have an important place. The Stillwater, Oklahoma, Fire Department which protects the community where the college is located, is part-paid. There will be a fire station on the campus, and the course will be conducted with Chief J. Ray Pence and the college instruction staff cooperating.

When Hospitals Put On Extra Help On the 4th of July and the days immediately preceding and following, the hospitals of the United States will put on extra help.

The fire department will, of course, issue warnings about fireworks. There will be some who think the firemen are spoilsports. An effective answer to such persons is to task them to call up the local hospital. By the time that the doctors in charge get through telling what plans they have made to take care of the 4th of July wounded, blinded and maimed, even the most cold blooded persons are likely to have some doubts whether there is enough joy in the use of fireworks to compensate for all the misery they cause.

The N.F.P.A. has campaigned for over thirty years against this needless loss of life, injury and fire waste. Any reader can help us keep this campaign going by collecting in his own town a list of the cases of injury and loss of life which occur this year.

Will you do this for us?

The clippings from your local daily or weekly newspaper would be valuable. Just put the notes or clippings in an envelope, being sure to indicate the state and town (and the name of the newspaper in the case of clippings) and mail them to the N.F.P.A., 60 Batterymarch St., Boston, Mass.

12,000 During the past month 407 men from the 19 fire departments listed below enrolled in the Volunteer Firemen's Section for the first time. In addition, 326 men in 15 companies renewed memberships. The total membership of the section is now 12,046.

Crescent City Volunteer Fire Department, Crescent City, California.

Wethersfield Fire Department Company No. 2, Wethersfield, Conn.

Macomb Fire Department, Macomb, Illinois.

Mexico Fire Department, Mexico, Maine.

Cooperative Volunteer Fire Fighters Association, Grand Rapids, Mich.

Hamilton Fire Department, Hamilton, Montana.

Roundup Volunteer Fire Department, Roundup, Montana.

Gorham Fire Department, Gorham, New Hampshire.

Gates-Chili Fire Department, Inc., Coldwater, New York.

Voorheesville Fire Department, Voorheesville, New York.

Belpre Volunteer Fire Department, Belpre, Ohio.

Hood River Fire Department, Hood River, Oregon.

Dover Union Fire and Hose Company No. 1, Dover, Pennsylvania.

Llanerch Fire Company, Llanerch, Pennsylvania.

Milbank Fire Department, Milbank, South Dakota.

Waynesboro Fire Department, Waynesboro, Virginia.

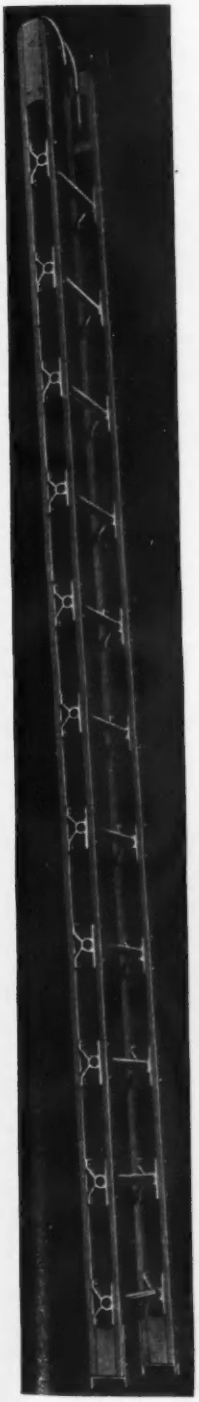
Kennewick Fire Department, Kennewick, Washington.

Durbin Volunteer Fire Department, Durbin, West Virginia.

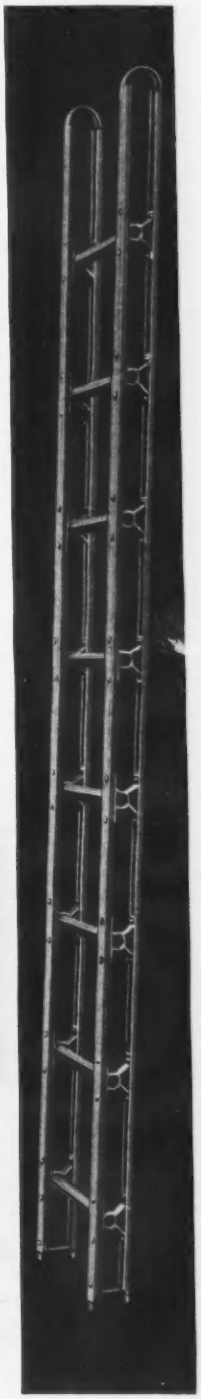
Coon Valley Village Volunteer Fire Company, Coon Valley, Wisconsin.

ANNOUNCING NEW LADDER DESIGN

THE INSULATED WOOD-METAL LADDER



THE ALL METAL LADDER



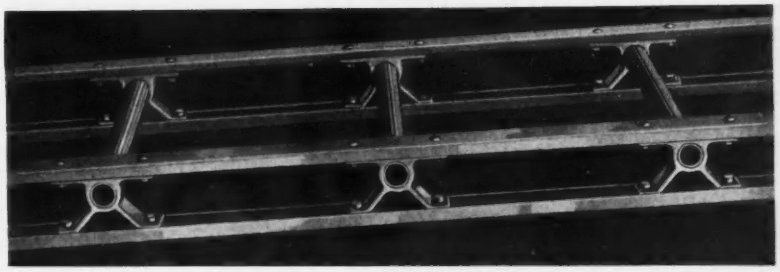
TWO NEW LADDERS

PATENTS APPLIED FOR

PATENTS APPLIED FOR

PIRSCH AGAIN FORGES AHEAD WITH SOMETHING NEW — THIS TIME WITH ADVANCED DESIGN IN GROUND LADDER CONSTRUCTION

SECTION SHOWING ALL-METAL LADDER



SIDE RAILS, RUNGS AND RUNG BLOCKS OF PIRSCH ALLOY

THIS NEW DESIGN OFFERS GREATER STRENGTH, LIGHTNESS, SAFETY AND LONGER LIFE

PIRSCH FIRE LADDERS ARE BACKED BY 40 YEARS LADDER MANUFACTURING EXPERIENCE

WRITE

PETER PIRSCH & SONS CO.

KENOSHA, WISC.

A 3000 Gallon Pumper!

New Los Angeles Duplex Pumpers Responding to First Alarms Function as High Pressure System, Greatly Reducing Apparatus Needed at Large Fires

ON THIS page last month we described a very modest piece of fire apparatus suitable for small villages. This month we present, in striking contrast, the world's most powerful land fire engine, a new duplex pumper of the Los Angeles, California, Fire Department. This pumper delivers three times as much water as a standard 1000 gallon job. It is no clumsy juggernaut, but a modern stream-lined kit embodying all the latest advances in fire apparatus design. It has, for example, an enclosed cab for the operators. Tools and appliances are not hung all over the outside of the apparatus but are in enclosed compartments. Even the suction hose is so carried.

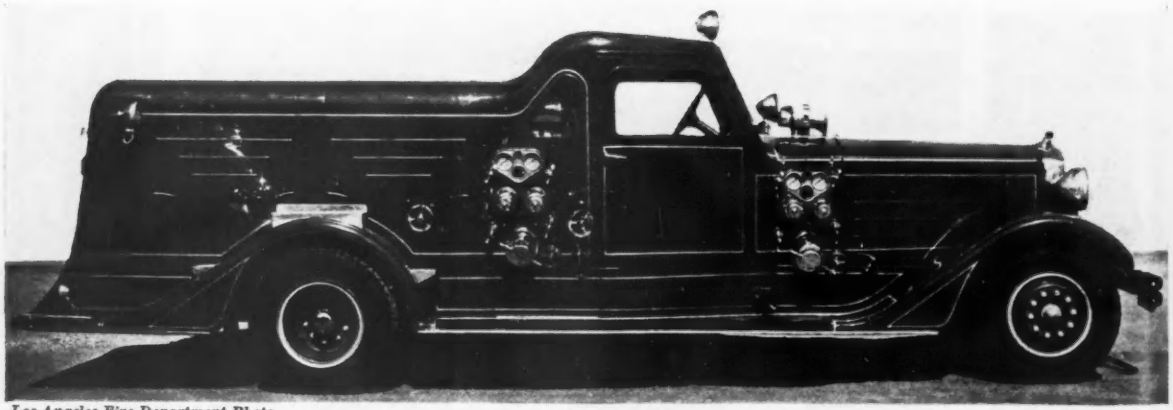
The development of a pumper which can deliver 3000 gallons of water was not an effort to see how large a pumper could be built but was the result of Chief Ralph J. Scott's years of experience in fighting large fires in the downtown district of Los Angeles. As is true in many other cities, Chief Scott found that when large fires occurred, traffic congestion often seriously delayed the arrival of much needed pumpers responding to second and third alarms. When additional alarm pumpers did arrive, the nearest hydrants to the fire were occupied by first alarm apparatus. This forced late arriving apparatus to supply long lines of hose. High friction losses resulted, making it necessary to operate pumpers at high pressures, greatly reducing the amount of water which could be delivered at large fires. To meet this problem some large cities have spent millions of dollars to install high pressure fire mains in a limited portion of their high value district. Chief Scott's solution is very practical and perhaps more flexible than a high pressure system. In Los Angeles the 4 pumpers responding on a first alarm will be able to deliver the same amount of water as the 12 engines which formerly answered a 3 alarm call. These 4 pumpers should usually arrive before traffic becomes congested. They will locate at hydrants close to the fire making possible the use of short lines of hose. This will also reduce the apparatus congesting the streets. In addition, fewer pump operators will be needed at a fire.

EACH pumper is equipped with two independent high pressure pumping units each of which is powered by a separate engine developing 225 brake horse power. The engine of the No. 1 unit also drives the apparatus. The No. 2 unit is located back of the driver's seat in the space ordinarily occupied by a hose body. Hose is carried in a separate hose truck.

The old argument of "putting all eggs in one basket" does not apply to the duplex pumpers. Each unit is completely independent of the other. This makes for flexibility as at a large fire one pump can be operated at high pressures to supply wagon guns and water towers while the other unit is supplying hand lines and inside streams at lower pressures. However, both pumps are interconnected so that the water from one can be discharged through the other.

The duplex pumper has the advantage over an ordinary pumper in the large amount of water that can be delivered at high pressures. While the usual 1000 gallon pumper is designed to turn out only 500 gallons a minute at 200 pounds per square inch pressure, the duplex pumper in an Underwriters' test delivered 2,790 gallons at 230 pounds pressure. This test was made using two 4-inch soft suctions from a double 4-inch outlet hydrant on an 8-inch main with 70 pounds hydrant pressure. Obviously an excellent water supply is necessary.

Los Angeles is going in for other high pressure pumping units. A high pressure triple combination streamlined pumper which delivers 1000 gallons of water per minute at 200 pounds pressure has also been put in service. This is 40 pounds greater pressure than the high pressure pumpers recently purchased by the fire department of New York City. Among the innovations of this piece is a four-door cab with seats for the entire apparatus crew, built in compartments for ladders, suction hose and other appliances. The hose body is divided with compartments for 3½, 2½, and 1½-inch hose, and an 80 gallon booster tank.



Los Angeles Fire Department Photo

A duplex high pressure pumper capable of delivering 3000 gallons of water per minute, of the Los Angeles Fire Department.

What Price Delayed Alarms?

WE are frequently horrified at the grim report of "Death by Fire." Many however feel that this fate cannot come to them and theirs—is only reserved for others.

Death by fire *is* preventable and should never occur, particularly in Public Institutions. Public officials and taxpayers continue however to ignore the responsibility—*which is legally and morally theirs*—in this grave matter. Quick response by the Fire Department is vital. Every second counts. In most cases the fire can be controlled, and loss of life and great property damage prevented, within the *first five minutes* after the blaze starts.

Prompt alarms also prevent panics. People in theatres, hotels, auditoriums, etc. children in schools have been trampled to death, suffocated in halls, stairways, exits in the mad rush to *get out*. DELAYED ALARMS ARE THE GREATEST CONTRIBUTING FACTOR TO DISASTROUS FIRES AND TO LOSS OF LIFE FROM FIRE.

A fire alarm system, constantly and automatically supervised, which transmits the alarm instantly and directly to the Fire Department and, at the same time, provides for the orderly evacuation of the building, is essential to protection of life and property.

THE THREEFOLD FIRE ALARM BOX

"A Box a Block" in congested high value districts; not more than 500 feet to the nearest box in closely built residential districts; convenient to every group of buildings, manufacturing establishments, and institutions in sparsely built districts is generally a safe rule to follow.

The GAMEWELL COMPANY

NEWTON UPPER FALLS

MASSACHUSETTS

Here's $10.00 Easy Money

Pyrene Prize Letter Contest Pays for Letters Telling of Fires Put Out With Fire Extinguishers

IF some firemen with a wealth of experience in fighting fires do not compete in the Pyrene Prize Letter Contest because they are afraid that they will come up against more expert letter writers they need no longer delay sending in a letter. Prizes in the contest which is conducted jointly by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN are awarded on the basis of the actual fire fighting experience with fire extinguishers. The contest is not limited to fires controlled with 1-quart carbon tetrachloride extinguishers. Accounts of good work done with soda-acid, foam, or other approved types have won many prizes. If you have recently made a good stop with a fire extinguisher write us about it. You can win a cash prize.

FIRST PRIZE — $10.00

ALLEN H. CLARK, *Chief*,

Fire Department, Lakefield, Ontario

Kills Paraffin Blaze

"Answering an alarm for a 'grease fire' in one of our best homes, we found an oven full of blazing paraffin wax which had been forgotten by the lady of the house. Realizing that to shut the oven door might result in an explosion I had the kitchen windows and doors opened and sent every person outside. Donning an all-service mask, I took a 1-quart carbon tetrachloride extinguisher into the kitchen. With a few shots from the extinguisher the fire was put out with a loss of only $50.00 to trimmings of the room. The ventilation and use of the mask made the operation comparatively safe and effective."

SECOND PRIZE — $3.00

FRANK HART,

Fire Department, Philip, S. D.

Congested Block Saved

"A few years ago I was repairing a small office which adjoined a café, dry cleaning plant and theatre. At the rear of the building was a lumber yard. At supper time we left a small kerosene heater burning and a large piece of composition board was leaning against the wall nearby. This board became warm and buckled in the center falling upon the stove. It quickly ignited and set the wall and ceiling afire.

Fortunately the manager of a nearby hotel had 2 1-quart fire extinguishers which he brought into action. By the time the alarm was turned in the fire was out. The extinguishers saved an entire block and many thousand dollars loss."

THIRD PRIZE — $2.00

ALBERT W. KIMBALL, *Lieutenant*,

Fire Department, Hingham, Mass.

Extinguishes Electrical Fire

"One night several years ago we responded to a box alarm and upon arrival found an oil transformer on a pole carrying a 2300 volt electric power line burning. A breakdown in the transformer had ignited the oil and the flames were igniting the wooden cross arms carrying the power lines which supplied that section of the town. As an electrician it was up to me to handle the fire. There was no telephone immediately available by which the power station could be notified. Selecting a 1-quart carbon tetrachloride extinguisher, which is a non conductor of electricity, I climbed the pole and quickly extinguished the burning oil and cross arms."

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.
2. Letters are to describe actual experiences where any approved fire extinguisher of any make has saved lives or property.
3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.
4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.
5. Only one letter may be submitted each month.
6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.
7. Letters received after the 8th of the month will be judged in following month's competition.
8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.
9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

NEW CATALOGUES

This department is for the convenience of readers who wish to be advised of new products or services in the fire field. When writing for catalogues please mention VOLUNTEER FIREMEN.

American Steam Pump Co., Battle Creek, Mich. Bulletin No. 75 (Edition No. 4). Data on Barton pumps and fire streams.

Atlas Fire Equipment Company, 22 Warren Street, New York, N. Y. Two leaflets—one on life saving nets, and one on life and ladder belts.

California Fire Extinguisher Company, 69 Main Street, San Francisco, Calif. "Forester Pak-Ezee Knapsack Pump-Tank", 8 pages. Complete description and list of parts for this make of extinguisher.

C-O-Two Fire Equipment Company, 560 Belmont Avenue, Newark, New Jersey. Catalogues C-14, 24 pages, describing industrial and marine carbon dioxide fire extinguishing systems and hand fire extinguishers.

W. S. Darley and Co., 2810 Washington Blvd., Chicago, Ill. Literature illustrating and describing a complete line of fire apparatus and pumps.

Federal Electric Co., 8717 South State St., Chicago, Ill. Bulletins Nos. 55 and 56. Complete details of Federal sirens.

The Fog Nozzle Company, 1520 East Slauson Ave., Los Angeles, Calif., 4 page, 2 color catalogue describing the Griswold "Fognozl" and "Fognozl" applicators.

The Fyr-Fyter Co., Dayton, Ohio. Four page illustrated leaflet describing 5 gallon farm fire extinguisher (new shape hand pump type with anti-freeze charge. Approved by Underwriters' Laboratories, Inc.)

Gamewell Co., Newton Upper Falls, Mass. "Vitaguard", a manual, 40 pages. A complete description of the Vitaguard fire alarm system for volunteer fire departments and industrial plants.

Koehler Manufacturing Company, Marlboro, Mass. "The Wheat Spotlight", 4-page circular. Description of Model S spotlight and battery charging outfit.

Mine Safety Appliances Co., Braddock, Thomas and Meade Sts., Pittsburgh, Pa. 4 page bulletin describing MSA All-Service Gas Mask (Burrell Type).

Pacific Marine Supply Company, 1223 Western Ave., Seattle, Wash. 40 page covered catalogue "Fire Suppression with Portable Pumper Equipment". Describes portable pumpers, hose operations and pressure charts for various forestry hose layouts.

CHAMPION Fire Apparatus

Built to do their duty · and *save you money*

It Costs So Little . . . . It's Worth So Much . . . .

To Protect Your Town With A Champion

When the safety of loved ones is at stake, no price is too dear. Fortunately the finest Fire Apparatus in the World — the Champion — is priced so moderately that every Chief can command at least one.

Champion Fire Apparatus on 1937 GMC Chassis Recently Delivered to Friendship Fire Dept., Friendship, Wis.

A Partial List of Fire Chiefs Who Took Delivery of New Champions in the Past Month

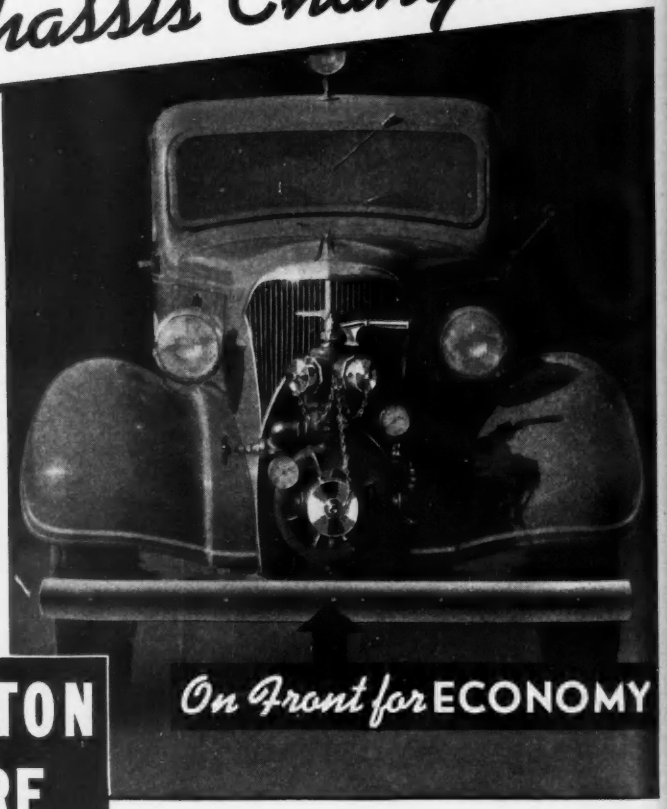
Chief C. A. Bradley, Trumbull, Conn., Ford
Chief D. T. Wilson, Hinton, Okla., Ford
Chief G. Estlinbaum, Junction City, Kans., Diamond T
Chief L. H. Peterson, Hinckley, Ohio, Chev.
Chief Frank Stapel, Rosendale, Wis., Ford
Chief H. B. Spiller, Cavalier, N. D., Ford
Chief George Pearson, Attala, Ala., Ford
Chief J. J. Murphy, Warren, Ariz., Ford
Chief Harry Durham, Benton, Ill., Dodge
Chief M. B. Geesey, Central City, Iowa, Chev.
Chief E. L. Spicher, Cherry Tree, Pa., Diamond T
Rural Fire Protection Inc., Yakima, Wash., Ford
Chief Charles Cripe, Walkerton, Ind., Ford
(This is Chief Cripe's SECOND Champion)
Chief J. Jaeger, Clarksville, Mo., Chev.
Chief John Redlinger, Convoy, Ohio, International
Chief Arnold Johnson, Geneseo, Ill., International
Chief J. Carson, Moriah, N. Y., Dodge
Chief M. R. Young, Savannah Beach, Ga., International
Chief Fred W. Pfingsten, Roselle, Ill., Diamond T
Chief Otho Mack, Gardiner, Mont., International
Chief Wm. A. Weber, Merton, Wis., Ford
International Petroleum Co., Toronto, Can., Ford
Chief Wm. Graham, New Eagle, Pa., International
Chief John Cunningham, Franklin, N. C., Chev.
Chief H. B. Berk, Winnemucca, Nev., Ford

Write for Advertising Literature illustrating and describing the complete line of Champion Fire Apparatus and Fire Pumps, Direct Drive and Gear Drive, Midship and Front Mounted.

W. S. DARLEY & CO. **2810 Washington Blvd. Chicago, U. S. A.**

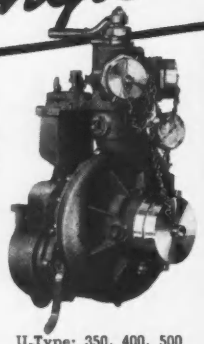
Built on Character and Fair Dealing for 30 Years

COMPLETELY INSTALLED *Without A Single Chassis Change!*



GEAR DRIVE

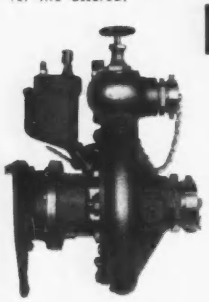
NOTHING FINER—Every U-Type Barton Pump is regularly equipped with built-in Gear Drive—truck motor operates at approximately ONE-HALF pump speed. With pump wide open and discharging at 250 lbs. pressure, motor loafs along—NO RACING—NO STRAIN! Long motor life assured.



U-Type: 350, 400, 500 and 600-gallon sizes.

DIRECT DRIVE

LOW PRICE—F-Type Pumps are also 250 lb. high-pressure units, having every U-Type feature except Gear Drive. They are Direct Drive pumps, operating at direct motor speeds, making for extremely low cost. We also build smaller Barton booster fire pumps at still lower prices.



F-Type: 400, 500 and 600-gallon sizes.

BARTON FIRE PUMPS

Ten years have passed since the first Barton Fire Pumps went into service, and these first pumps are still making good—for we maintain the highest standards of workmanship and use the finest materials money can buy.

"How is it then that a Barton Pump saves so much in first cost?"—a fair question, frequently asked. The answer is found in our unique design and in our method of mounting. For any capacity rating, a Barton Centrifugal Fire Pump is smaller, more compact and weighs less than older types. You buy no excess weight — no expensive gadgets. Lower cost, naturally!

But that's only half the economy story! Because of Front-Mounting (see above), a special expensive truck is not required. Any size Barton Pump can be used on a standard truck—completely installed and ready for service without a single chassis change, costing only a few dollars for mechanic's labor.

UNDERWRITERS' TESTED

Barton Fire Pumps meet and exceed Underwriters' requirements. They will handle clean or DIRTY water. They are Automatically Primed. And there's a size for every need and pocketbook. Write for full details today!

AMERICAN STEAM PUMP COMPANY

BATTLE CREEK, MICHIGAN . . . . PUMPS AND PUMPS ONLY SINCE 1873

PRINTED IN U. S. A.